MAN OF THE FUTURE

A Genius Who Loves America and Has Added to Its Greatness.

How Tesla Looks at Work—Once a Newspaper Man, Now the Greatest of Electrical Seers—Prophecies for the Future.

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It is a most difficult thing to interview Nikola Tesla, but to sit down and talk with him, man to man, ah, that is a different matter, and if one has had that privilege he will be glad to remember it in years to come, and to tell his grandchildren about it, for it is quite likely that they will know very well who Nikola Tesla was.

This brilliant young electrician, who undoubtedly is the foremost thinker of the world in his chosen field, is honestly and sincerely modest. No writer who has tried to get him to talk for publication has any doubts on that score. "It is an embarrassment to me," he says, "that my work has attracted much public attention, not only because I believe that an earnest man who loves science more than all else should let his work speak for him if it will, but because I am afraid that some of the scientists whose friendship I value very much suspect me of encouraging newspaper notoriety." Mr. Tesla reverted to this matter several times in the course of two conversations and is evidently sensitive about it. Therefore the portions of this article that come from him should be regarded as a special concession, particularly as he has never talked so freely before. Bogus interviews with him have been published of late, but this is genuine.

Mr. Tesla spends his days on the fourth floor of a machine shop at No. 33 South Fifth avenue. His name does not appear anywhere on the building, and there is nothing about the place to indicate that it is one of the world's centers of electrical interest. The whole floor is occupied by Mr. Tesla's laboratory, except that one corner is partitioned off into the plainest of little offices containing principally a modest desk for the inventor, a yet more modest desk for his bookkeeper, a bookcase largely devoted to the "Official Gazette of the patent office," and a small blackboard which hangs on the wall and bears evidence of hard usage. The black is worn from this board in several spots, and the rest of it is covered with figures and cabalistic signs. No doubt the science of electricity would have been notably poorer but for some of the problems worked out on that shabby

LISTENING FOR THE FIRST MESSAGE SENT THROUGH THE EARTH.

blackboard, for when the inventor is puzzled he goes to it and works away on it nervously with a stubby piece of chalk.

The laboratory itself looks commonplace to the uninitiated. It is filled with machinery and electrical appliances, and a stranger prowling about the building at will would surely mistake its fourth floor for a part of the machine shops below. One who is not an electrician would find in the Tesla workshop none of the marvels that make Edison's laboratory better than a circus for the sight-seer. An electrician, however, would find secrets there with which he could make and break colossal fortunes on the stock market, or reasons that will appear further on.

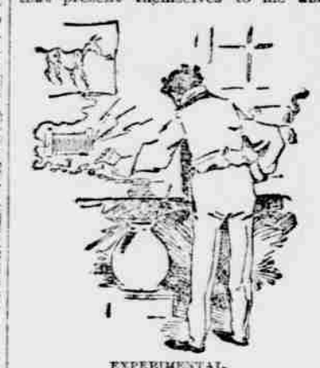
But Mr. Tesla's half-dozen employes are tried and trusted men, and the would-be visitor finds it an extremely difficult matter to get into this laboratory. If he did get in he would be more than likely to find the inventor there working over some bit of machinery, with a handkerchief tied about his throat in lieu of a collar, yet dressed in clothes of fashionable cut, and generally looking very neat and clean. Unlike Mr. Edison, the younger inventor has some regard for his personal appearance.

One rarely meets a man more free from affectations and self-consciousness than Nikola Tesla. He does not like to talk of himself, and when that subject comes up he is sure to steer away from it as quickly as possible. He has bachelor quarters at the Gerlach on West Twenty-seventh street, but he can be found at Delmonico's nearly always at breakfast and dinner time.

With due apologies to Mr. Tesla for so much personality, it may be said that he has the same cast of countenance as Ignace Jan Paderewski—long and thin, with fine, clean-cut features, low forehead, and a certain gleam of the eye that denotes what might be called spirituality. He is an idealist, and one who has created an ideal of him from the fame that he has won will not be disappointed in him upon seeing him for the first time. He is fully six feet tall, very slender, very dark of complexion, nervous and wiry. Impressionable maidens would fall in love with him at sight, but he has no time to think of impressionable maidens. Day and night he is working away at deep problems that fascinate him, and anyone who talks with him for even a few minutes will get the impression that science is his only mistress and that he cares more for her than for money or fame.

Anyone who has met Paderewski and has been able to speak German or French with sufficient fluency to enjoy a conversation with him, and who has also had the pleasure of a talk with Tesla across one of Delmonico's tables, will feel instinctively that the Polish pianist and the Servian electrician have much in common, and that it is a great pity they have never met. Some philanthropist could do both of them a service by bringing them together when Paderewski comes to this country again next December. They could at least find a common ground of interest in Slavic literature, with which both have a wide acquaintance.

Speaking of love for science, Mr. Tesla said the other day in one of the rare moments when he could be induced to talk of himself: "Wherever I am, I cannot help working at problems that present themselves to me and



EXPERIMENTAL.

seem so important that I cannot help but try to solve them. I spend so many hours at my laboratory at times that my friends become alarmed and threaten to lock the place up and hide the key. Seriously," he continued, with earnest face and eyes fairly ablaze, "seriously, if they tried to do that I should shoot them. I would, indeed. It makes no difference to a man's health how long he works so long as he loves his work, for his affection is like the oil in the lamp which keeps the wick burning without consuming the wick itself. When the oil is gone, then it is that the wick goes fast. If at any moment I lost my eagerness and enthusiasm, then very likely I would go to pieces.

"That was what would have happened to me if I had continued to be a journalist. You never knew that I was once a member of your profession? Well, I was. The trouble with me was that I wrote too carefully, and, as it seems to me, too thoughtfully. When I wrote an article of which I was particularly proud, my friends would say: 'Tesla, that was a masterpiece!' But the editor would say: 'Why don't you write something more lively? Not a half a dozen people will read that stuff.' No, journalism is the hardest work in the world for the man who wishes to be thoughtful. My heart was not in it, and it would have worn me out soon, like the wick without any oil. Even as it is now I get worn out sometimes, but it is a great comfort to be one's own master and to feel that there is nothing to prevent one's dropping all work at any moment and starting for Europe or somewhere else for as long a rest as one wants.

"I have noticed a queer thing about my mental operation, and that is that my mind seems to work in two halves, each independently of the other, so that when I talk, or even when I sleep, only one half of my mind appears to be thus engaged, the other half goes on steadily with whatever I have on my mind, or may be I ought to say with whatever it has on its mind. My friends say: 'You will kill yourself.' I say: 'Nonsense.' I used to be an athlete once and I recuperate very quickly. See me now." He held up his hands as if they were trustworthy indicators of his physical condition. They were long and thin and nervous. They trembled a little and the conclusion naturally to be drawn from them was that their possessor was a man whose tremendous energy, although under good control, was likely to use him up if run at such high pressure much longer.

Mr. Tesla is only thirty-seven years old, and he looks even younger. He was born at a town called Smiljan in

THE INCANDESCENT HUMAN LAMP.

Servia, on the borderland of Austro-Hungary. His family was an old one, cultured and highly respected. His father was an eloquent preacher of the Greek church, and his mother was a woman of remarkable ingenuity. He had an inherited taste for mechanics, and it is her blood that made Tesla what he is. His father wanted him to enter the church, but he could not be kept away from experiments in magnetism and electricity, in which he was deeply interested by the time he was sixteen. He was finally permitted to go to a polytechnic school with the idea of becoming a professor of mathematics and physics. He was making inventions of improvements for the telephone before he was twenty-five years old. He secured employment in Paris as an electrical engineer and then came to America early in the 80's, not because he had any definite employment in view, but because he became convinced that the United States was the best country in the world for an inventor, because new ideas were more quickly and highly appreciated here than anywhere else.

The day he arrived here he went to work for Mr. Edison, for whom he had, and has yet, the strongest admiration. He left the Wizard of Menlo Park in order to join a company organized to sell some of his inventions in arc lighting.

Much of Mr. Tesla's spare time during his first five years in this country was devoted to experiment with what is known as the rotating field for use with the alternating current. In 1887 Prof. Anthony proved that the young electrician had produced an alternating current motor of an efficiency equal to that of direct current motors, yet dispensing with the brushes and commutators which had added materially to the cost and inconvenience of manufacturing electricity.

He pushed on eagerly in the field he had opened, experimenting with alternating currents of extraordinary high potentials and frequencies. The results of his experiments were laid before the public in a lecture delivered before the American Institute of Engineers in May, 1891. Before that time he had been known only to electricians. By the hour the reports of that lecture had found their way to the public he was famous. The brilliant gathering of scientists before whom the lecture was delivered was taken by storm with his theories and his remarkable experiments in verification of them. Soon after another lecture was delivered before the most notable body of electricians in Europe, the Institution of Electrical Engineers in London, and his reception by them was as enthusiastic as it had been in America. A day later, by special request, he repeated his experiments before the Royal institution, and soon afterward responded to an urgent call from the two foremost societies of engineers in France. In 1893 he delivered lectures in Philadelphia and Europe which served to intensify public interest in him. One of his experiments on these two occasions was spectacular in

NIKOLA TESLA.

the extreme. Facing an audience of some five thousand persons, he passed through his body a current of two hundred thousand volts, causing streams of light to pour from his body and break forth from his finger tips, whereas a current of a hundredth part of that energy would have killed him instantly, thus proving that the amount of electric energy that may be passed into the human body depends on the strength and frequency of the current, and that the higher these are the less harm they do the body. Mr. Tesla said at the time that the only inconvenience he felt from thus making an electric light of himself was a slight prickling as of a needle and a burning sensation at the finger tips.

Most important work on which Mr. Tesla is now engaged, and which bids fair to bring him more fame than anything he has done before this, is a machine by which a heretofore unheard-of steam pressure can be applied to the generation of electricity, reducing the waste of the current, and, what is of supreme importance, reducing the cost of electricity.

It is easy to see that any device by which the cost of electric power is brought below the cost of steam power will bring a revolution in the processes of manufacturing more sudden and startling than was brought about by the introduction of steam. The economical transmission of electricity generated by water, as at Niagara falls, has at last brought a promise of this revolution, and if Mr. Tesla's machine will bring a corresponding reduction in the cost of electricity to cities too far away to derive benefit from water power like that at Niagara, then, indeed, the revolution will be complete. Electric motors will everywhere take the place of costly and wasteful shafting in mills and factories, and the day when private houses will be lighted, heated and, to some extent, ruled by electricity, will be brought almost as near to other cities as it now is to Buffalo, which will receive its first installment of power from Niagara falls in a few weeks at a price promised to be somewhere near a fourth cheaper than that now paid for the work done by steam.

This much may be said positively, and the statement is here made to the public for the first time: If the wonderful machine on which Mr. Tesla is now putting the finishing touches works as well elsewhere as it has already worked in the Tesla laboratory, it will bring the extraordinary advantages suggested above. The inventor himself refuses to make any definite statement as to what his engine will do. "I know," he says, "that it will accomplish in my laboratory results that cannot but be considered important, and that certainly opens up a new field for high-pressure boilers. It is now in operation and has succeeded absolutely, but of course I must not predict from laboratory results what a machine will accomplish when applied to public uses. It may take two or three years to prepare for placing it on the market. I have, of course, a pretty definite idea as to the reduction it will make in the cost of electricity, but there are many reasons why it would not be well to give the figures."

The young inventor endeavors to speak very conservatively of this new machine of his, but it is quite probable that he believes he has solved one of most important practical problems within reach of the electrical science of the present day. Anyone who is familiar with the mathematics of the steam engine will appreciate one phase of his device when it is stated that it is now run with a steam pressure of three hundred and seventy-five pounds, the highest that was ever put to practical use. The pressure generally used is about one hundred and seventy-five pounds. The boiler which supplies this steam pressure in the Tesla laboratory is said to be the most powerful ever constructed. It was built for the inventor by Babcock & Wilcox, and so far has responded to the amazing test to which it has been put. The machine to which this unprecedented pressure has been applied has to run almost without friction, that is the kernel of Mr. Telsa's discovery. He tells me that he would dare apply a steam pressure of one thousand pounds to his machine, and would do so if he could get a boiler that could supply the pressure. Engineers who read this statement will conclude, unless they know Mr. Tesla personally, that he is crazy.

One technical value of this new discovery for utilizing steam at high pressure is in the saving that it makes in the cost of heat for producing the steam, because it is a queer freak of nature that requires proportionately much less heat to produce steam at high pressure than to produce it at low pressure. For instance, it takes an increase of only fifty-six degrees Fahrenheit to raise steam pressure from twelve pounds up to two hundred and fifty pounds.

There are other electricians who say of Mr. Tesla that he is not a particularly great man as a practical, working electrician, and that his machines are not always as valuable in practice as they are in theory, but most of them admit willingly that he has no peer as a theorist and investigator, a dreamer of the dreams that will come true. His talk of the future is worth thinking about. He is very confident that great things are coming soon through the utilization of the electrostatic or magnetic condition of the earth itself. "Some time," he says, "electricity will be taken from all about us and used for light, heat and motive power. We will reach down to the earth and tap the current anywhere, getting all we want without expense. It is interesting to sit down somewhere away from all interruption and think out what that would mean. It seems hardly possible that these wonders can be far away, because the process by which they can be realized is so simple. Expressed roughly, all that would have to be done would be to set the earth's electricity to vibrating, and adjust a machine to these vibrations wherever the force was required. It is something as if the earth were a rubber bag. Shake it in one place and you feel the vibrations in another place. You and I could not feel the electrical vibrations, but I have in mind a machine that will. If nothing else is transmitted by these vibrations, intelligence surely will be. I have the best of reasons for predicting that messages will be transmitted through the earth in this way without wires like a pulse through a human being. It seems surprising that this has not been done before.

"It is reasonable to suppose that the earth's electricity is generated by the atoms of which all things are composed. We and our world are not only whirling through space with terrific speed, but every little atom in the world is whirling, too. Now, there is good reason to believe that the molecules and their atoms are really little worlds that revolve and move in their orbits like the stars, causing the ether about them to spin with them, thus generating electricity, or affording the conditions suitable to its generation.

"While electricity could hardly be called the ether itself, it is probable that the effects of dynamic electricity and electro-magnetism are the effects of ether in motion, and the effects of static electricity are the effects of ether under a strain. The discovery of a method of utilizing this practically exhaustless force that lies so close at hand would uncover what are surely some of the greatest secrets of the universe. It would be the greatest discovery since the creation, and would bring about a total revolution in all life."

Mr. Tesla's enthusiasm is of the kind that kindles quickly, and the great electrical work now going on at Niagara Falls is one of the subjects that is most likely to arouse it. "Some day all wood and coal will be used up," he said, when this subject was introduced,

POWER GENERATED FROM NIAGARA FALLS.

"and, so far as I can see, we will freeze and starve to death unless electricity is used to transmit the exhaustless energy of water power to any distance, wherever man has his habitation, and turn it into light, heat and power for him. But now that transmission of energy by means of electricity has become not only possible but practical, there need be no more unpleasant speculations about what will happen to us after the world's supply of fuel has been exhausted. The operations at Niagara are a promise to us of this insurance against what the future may have in store for us. The work there is inspiring of confidence, too, for the future of electricity."

He believes it is possible to deliver electricity generated at the falls to the doors of New York cheaper than steam power is generated there. He was explicit on this point and had evidently given careful thought to the subject at some previous time. He said: "If you have one hundred and fifty thousand horse-power to transmit into new bulk you can send it five hundred miles and yet compete with steam generated on the spot for the engines now in use. But if you send only ten thousand, for instance, then in my estimation, it cannot be sent to compete with steam to a distance of more than fifty miles. It should be added, however, that while this statement is true according to the results of laboratory practice, it may not apply exactly to the actual operation where all the differences of conditions from those in the laboratory cannot be fully discounted beforehand."

A fellow electrician who is in a position to judge of Mr. Tesla with friendly impartiality gives this opinion of him, and it is an opinion that probably will be found to have the approval of most of the scientists who have come in contact with this wonderful young man: "He is a scientist who is in advance of his time, a seer, a genuine poet of electricity, a man whose eye is focused to the great things of science, and whose mind is fitted by nature to deal with them better than with the commonplace things that the most are obliged to busy ourselves with. He has been charged with being a visionary, but it seems to me that the charge is misleading, for though Tesla undoubtedly has seen visions that other scientists had not seen, some of them were based on reasoning rather than on imagination unaided by facts, as was proved by the circumstances that the other scientists saw the same visions after Tesla had pointed out the way to look for them. They were visions that opened rich new fields for scientific exploration and that will bring practical benefits to every household. Tesla is young and strong and his head is not turned. He is as eager as ever and there is no reason to suppose that the most brilliant and useful part of his life is not yet before him."

Mr. Tesla is going to Europe very soon, but not to stay—not by any manner of means—he is too thorough-going an American for that. He believes the United States is the most progressive, enlightened and liberal land on earth, and of all the reasons he has for satisfaction with life he holds one of the greatest to be the decision that brought him to this country ten years ago.

I said to him a week ago, on bidding him good-by: "You're sure you are thoroughly Americanized now; that you'll never hunger after any other titles than that of a citizen of this United States," and this was the memorable saying with which he made an enthusiastic answer:

"You bet."

CURTIS BROWN.

THOSE LITTLE WORLDS.

Mrs. Peterby, of Austin, Tex., is a kind mother and a faithful wife, but in some respects she is not as bright as she might be. The conversation was about counterfeiters.

"There is one very strange thing about these counterfeiters," said Mrs. Peterby.

"What is that?"

"They are always arrested for counterfeiting dollars. I have never heard of one making good dollars. They seem to be naturally depraved."—Alex Sweet, in Texas Siftings.

FIXED FOR AUTUMN

Elegance Will Be the Feature of Cool Weather Gowns.

A Peep at the Trousseau of a Wealthy Chicago Bride—The Wedding Gown and the Bridesmaids' Costumes — The Latest in Millinery.

[Special Chicago Letter.]

Signs that point to the fact that autumn's reign has begun are by no means confined to the weather. Nowhere is it more in evidence than in the dry goods stores where the counters and shelves are filled with imported and domestic fabrics for autumn and winter wear.

In the matter of materials, with one or two exceptions only, there is little

BRIDAL COSTUME.

novelty. A soft, sheeny, satin-like luster is observed in some of the importations, and there is a return to the pretty embossed cloths that were displaced a few seasons ago. Plain colors, mixtures of two or more colors and blurred effects are among the newer goods, and last, but not least, tricot wash plush. This material seems to be marching straight toward popular favor. It is light in texture, warm, durable and deliciously soft to the touch, and, as its name indicates, will wash. It comes in all the new colorings as well as black.

Gray, dark brown, tan, hyacinth and dark green appear to head the list of fashionable colors, while that peculiar shade of blue called bluet has lost none of its standing. Black is also popular, and some of the newest and handsomest weaves come in this somber hue.

Lovers of the novel will find something to interest them in the new skirt sent over by Panquin, of Paris. It measures quite eight yards in width at the foot and falls in godets nearly all around the wearer on the sides as well as in the back, only a short space directly in front lying flat. To hold the godets in place two fine steels, flexible as watch springs, are placed around the skirt next to the lining, one at the foot, the other ten inches above, and these are held in position by short rubber straps. The front is shaped by a seam down the middle and boned across the upper portion to keep it smooth and flat. This skirt has very little fullness at the top and when intended for street wear is made to clear the ground, as, owing to its width, the steels and rubber straps, holding it up would be an impossibility.

At first glance this skirt seems irredeemably ugly, but it grows on one, as it were, and like for other novelties an admiration for it may be soon acquired.

Charmingly chic are the gowns sent from over the sea. They are trim, well-built and undeniably good looking. The gowns destined for the house are made of crepon or other light weight material over a silk lining of a contrasting color. The short round waist is generally relieved by

GOING-AWAY GOWN.

trimmings of lace or chiffon and the inevitable bow of satin or moire ribbon.

The skirts of most of the new gowns fit smoothly in front and on the sides and fall in four curved folds in the back. They measure five yards at the foot and are held out there by a thick cord of candlewick covered with satin, this being all the trimming that is seen on some of the most elegant models. When other trimming is used it usually takes the form of point applique velvet cloth or satin, the leaves being delicately outlined by a fine metallic cord.

A charming calling gown that elicited much admiration was made of royal purple cloth, trimmed with appliques of violet velvet on white satin. The entire front of the bodice was covered with the appliques, and a handsome effect was given to the skirt by a broad band of the applique designs placed at either side of the front breadth reaching from belt to foot.

The tailor-made gown still holds its own for shopping and general utility wear. Those brought out within the past week have an air of stability about them that recommends them to the prudent purchaser. They are mostly sober in color and heavy in texture.

The idol of the moment for the strictly tailor-made gown is the new Himalaya cloth, or snowflake, as it is more commonly called. It makes an ideal gowning for the youthful, slender woman, but as it adds much to the size of the wearer, the stout sister, if she be wise, will content herself with one of the many faced cloths which are equally pretty and stylish.

The fall wedding is the first opportunity that one has for the display of handsome evening dresses, or of the afternoon gown, if it is to be a noon wedding. Several of the large establishments are busy with orders for such garments, and the smart evening wedding is now the next move on the social calendar.

The materials that are to be used are of the airy fairy description, such as gauze, chiffon and tulle, or, on the other extreme, stately pompadour silks or ivory white satin of brilliant sheen, so long the ideal and traditional fabric for wedding gowns.

At an importer's where I went to inquire about these gowns I was shown the entire wardrobe of the bridal party.

The wedding dress, which was of white satin, was made severely plain with high neck and long sleeves. The only trimming, save two clusters of orange blossoms, was lace, which alone was worth a small fortune. It was prettily placed across the lower portion of the skirt and also ornamented the bodice, and was of that beautiful pattern called Irish Mechlin. This, by the way, is the latest fashion in lace and will be found on many of the new gowns sent out from the fashionable establishments.

The eight bridesmaids' dresses were made of chiffon, two in white, two in hyacinth, two in pale pink and two in dove gray. The skirts were accordion plaited and the waists were also of the pliating. The sleeves were very large,

A PRETTY HAT FOR AUTUMN.

and around the waist will be worn broad sashes of moire ribbon.

To go with these gowns were fan, gloves and dainty satin slippers with large rosettes of chiffon.

I saw several of the gowns to be worn by members of the family at this wedding and the brides mother's toilet. The latter was of heavy corded silk of a delicate shade of old gray, trimmed with silk embroidery and fine white lace.

It was the gown par excellence for the dowager, with gloves and slippers of gray to match and to complete the toilet.

A gown to be worn by the young married sister of the bride was a bright blue crepon, lined with reseda green; the bodice was of blue chiffon through which gleamed softly a silken lining of green. Another dress in this wardrobe would induce envy in a much stronger minded woman than I claim to be. It had a skirt of black chiffon and a bodice of silk tissue, patterned all over with pink-tipped daisies. This was lined with pink silk, and is to be crowned by a bonnet of cream lace, trimmed with black wings and pink roses.

The bride's going-away gown was of rough-surfaced cloth, dark-green in color. The waist was round, with a broad bertha collar. Soft folds of miroir velvet trimmed the skirt and waist, and the belt and collar band were of the same material. The hat was of felt with folded brim of velvet and ornamented with feathers and loops of green moire ribbon. The ties were of dark-green velvet.

To wear with this dress on the first cool days was a triple collet of green velvet. This fluffy little cape does not reach to the waist and is very broad across the shoulders.

Autumn millinery is no less attractive than autumn gowns. Importations are just being received at the leading houses, and some of them show novel effects. Bonnets are exceedingly small, but are prettier than they have been for several seasons. Felt hats, while not as dressy as the velvet ones, will be very much worn.

The picture represents a very pretty model made of felt with an exceedingly full ruche of ribbon around the crown. Placed in front are two swallows, their black wings and white breasts showing prettily against the background of ribbon.

For usefulness nothing could be better than a black felt, sailor-shaped hat, trimmed at each side with a brilliant buckle fastening, a bow of moire antique and a cluster of jetted coque feathers.

KATE GARDNER.

He Took the Hint.

"Help me on with this overcoat, my peach," said Herbert to Adele.

"No, Herbert; I'm not your peach, but your lemon. And if you want lemon aid you know what you must do first."

Herbert squeezed his lemon.—Truth.